

# ISE 306/506 Engineering Statistics II Fall 2004

**Course Code:** 04011/04031

**Faculty:** David Koonce                      **Office:** 283 Stocker Center

**Time:** MTWF 9.10 A.M. →10:00      **Place:** 107 Stocker

**Email:** koonce@ohio.edu              **Prereq:** ISE 305

**Off. Hours:** 8-9 MTWF

**Text:** Applied Statistics and Probability for Engineers, 3<sup>rd</sup> Edition, Montgomery and Runger, Wiley, 2003

## Course General Objective:

Introduce students to the central limit theorem, random sampling, estimators, bias and estimation, hypothesis testing, linear regression, correlation, and factorial experiments.

## Course Specific Objectives:

At the end of this course students should be able to:

- Adjust Type I and Type II error terms within hypothesis tests
- Perform linear and multiple regression analysis
- Block out error in randomized complete block ANOVA analysis
- Use a spreadsheet for basic statistical analysis functions
- Compare two populations, for both mean and variation, using random samples
- Conduct hypothesis tests on population parameters utilizing point estimates from random samples
- Describe an unknown population using statistics from a random sample
- Determine if multiple samples from multinomial distributions are independent
- Determine sample sizes for hypothesis tests of population means
- Determine the best sample measure of central tendency for a sample from a known population distribution
- Estimate population proportions using binomial tables and normal approximations to the binomial, for small and large samples respectively
- Plot X, Y data and identify linear and transformable patterns.

## Grade distribution:

- Homework, in-class labs and portfolio assignments 50%
- Mid-term Examinations 30%
- Final Examination 20%

	A=93-100%	A-=90-92%
B+=87-89%	B=83-86%	B-=80-82%
C+=77-79%	C=73-76%	C-=70-72%
D+=67-69%	D=63-66%	D-=60-62%
Below60%=F		

## Homework, Make up quizzes, midterms, and final policy:

Missed homework submissions and exams may only be made up when a legitimate class absence occurs. Final grades will be assigned using the following scale. If necessary, grades will be rounded up. (No student's grade will be rounded down.)

## Attendance policy:

Class attendance is encouraged, and required, each student is allowed three (3) absences. Each absence after the first three will result in a loss of one (1) point off the final grade.

## Scholastic dishonesty policy:

Cheating on examinations, submitting work from other students as your own, or plagiarism will result in an automatic F on the assignment and possible further action from the university.

## Course topics & Calendar

Day	Date	Topics
M	9-6-2004	Intro, Chapter 8
T	9-7-2004	
W	9-8-2004	
F	9-10-2004	
M	9-13-2004	Chapter 9
T	9-14-2004	
W	9-15-2004	
F	9-17-2004	
M	9-20-2004	Chapter 9, Exam 1, Chapter 10
T	9-21-2004	
W	9-22-2004	
F	9-24-2004	
M	9-27-2004	Chapter 10
T	9-28-2004	
W	9-29-2004	
F	10-1-2004	
M	10-4-2004	Chapter 11
T	10-5-2004	
W	10-6-2004	
F	10-8-2004	
M	10-11-2004	Chapter 11, Exam 2, Chapter 12
T	10-12-2004	
W	10-13-2004	
F	10-15-2004	
M	10-18-2004	Chapter 12
T	10-19-2004	
W	10-20-2004	
F	10-22-2004	
M	10-25-2004	Chapter 13
T	10-26-2004	
W	10-27-2004	
F	10-29-2004	
M	11-1-2004	Chapter 13, Exam 3
T	11-2-2004	
W	11-3-2004	
F	11-5-2004	
M	11-8-2004	Chapter 14
T	11-9-2004	
W	11-10-2004	
F	11-12-2004	
M	11-15-2004	Chapter 14
T	11-16-2004	

## ISE 306/506 Homework Assignments

- All homework is due at the start of the first class after we finish covering the chapter.
- **All homework is to be neat and done on the computer.**

- No more than 2 problems to a page.
- All work is to be shown.
- No group work is allowed  
(However, you may seek help from other students for difficult problems. But, you must list the names of those students on your submission.)

Chapter 8 – 8, 12, 14, 22, 26, 30, 36, 46, 57, 68, 72, 84

Chapter 9 – 2, 5, 12, 13, 22, 32, 40, 45, 50, 60, 66

Chapter 10 – 4, 5, 8, 11, 14, 20, 22, 41, 53, 56, 62, 65, 76

Chapter 11 – 2, 4, 5, 19, 21, 32, 33, 42

Chapter 12 – 1, 4, 6, 8, 13, 16, 19, 27, 29, 36, 38, 46, 54b

Chapter 13 – 1, 4, 6, 8, 21, 28, 29

Chapter 14 – 1, 2, 8, 12, 14, 17, 24

### **ISE 306/506 Portfolio Assignments**

As part of our course assessment process, we will be evaluating your performance on certain key outcomes from this course. During this quarter, I will give out several assignments which will consist of single problems that test a specific skill, ability or knowledge. These will be independent of regular assignments. They will be graded and will factor into your home work grade (50% of your overall points).